We claim:

1. A solid, acid catalyst for the preparation of polytetrahydrofuran, polytetrahydrofuran copolymers, diesters or monoesters of these polymers by polymerization of tetrahydrofuran in the presence of at least one telogen and/or comonomer, in the form of a clay material which comprises at least 20% by weight of SiO_2 and at least one further oxide of an element selected from the group consisting of Al, Fe and the elements of groups III A to VII A of the Periodic Table, has a proportion of alkali-soluble silicon dioxide of from 20 to 85% by weight, where the catalyst is a catalyst which has been calcined at from 150 to 800°C and has an N_2 pore volume of at least 0.35 cm^3/g for pore diameters in the range from 2 to 200 nm, with at least 0.2 cm^3/g of this N_2 pore volume being made up by pores having diameters in the range 5-50 nm and the mean BJH pore diameter (4V/A) of the pores in the range from 2 to 200 nm being from 2.0 to 10.0 nm, has a BET surface area of at least 160 m^2/g and has an acid center density of at least 0.25 mmol/g for pK_a values of from 1 to 6.

2. A catalyst as claimed in claim 1, wherein the clay material has a methylene blue value of at least 250 mg/g.

3. A catalyst as claimed in either of claims 1 and 2, wherein the clay mineral is a sodium bentonite.

4. A process for preparing polytetrahydrofuran, polytetrahydrofuran copolymers, diesters or monoesters of these polymers, which comprises polymerizing tetrahydrofuran in the presence of at least one telogen and/or comonomer and in the presence of a catalyst as claimed in any of claims 1 to 3.

5. A process as claimed in claim 4, wherein tetrahydrofuran is polymerized in the presence of carboxylic anhydrides, preferably acetic anhydride, to give polytetrahydrofuran or derivatives and copolymers thereof having molecular weights of from 250 to 10000 dalton.